

### **REMARKS**

Claims 1-22 are pending in this application. Claims 6-8, 10-12 and 22 have been allowed. Claims 1-5, 9 and 13-21 stand rejected. Claims 3, 4, 13 and 15 have been amended herein.

#### **Applicant's Response to the Rejections Under 35 U.S.C. §102**

Presently, claims 1, 4, 5, 14-16 and 20 stand rejected under 35 U.S.C. §102(e) as being anticipated by *Takahashi et al.* (USP 6,607,981).

In regard to claim 1, Applicant respectfully traverses on the basis that *Takahashi et al.* does not disclose all the limitations of claim 1. Specifically, the limitation of "forming the electroless plating on the surface of the object to be plated without the metallic film formed thereon and the metal in contact therewith" is not disclosed in *Takahashi et al.* The present application discloses the electroless plating 3 being formed on the object to be plated 11 on the opposite side 11b to the side 11a with the metal layer 2 (*see* application, page 16, line 12 to page 17, line 12). However, *Takahashi et al.* discloses an electroless plating whereby a CuSO<sub>4</sub> solution 14 is reacted with a nickel oxide layer 12 to form a copper oxide 15 followed by a reducing solution 16 to form copper metal 17 on the exposed areas 100 (*see* Figs. 2A and 2F).

In *Takahashi et al.*, plating is performed on only a single face of the resultant board 10, and the other surfaces are not taken into consideration. At no point does *Takahashi et al.* disclose the plating occurring on a surface other than on a metal film. The resist layer 13 is an epoxy resin, and the substrate 11 is standard (col. 6, lines 17 to 29). As such, *Takahashi et al.* does not disclose key limitations of claim 1. Applicant respectfully requests that *Takahashi et al.* be removed as an anticipating reference to claim 1.

In regard to claim 4, Applicant has amended claim 4 to be dependent on claim 1.

In regard to claim 14, Applicant respectfully traverses on the basis that *Takahashi et al.* does not disclose all the limitations of claim 14. *Takahashi et al.* does not disclose the removing of the metallic film as is required by the claim. The plating film in *Takahashi et al.* is the plating Cu film 22, and the document does not disclose to remove the plating Cu film 22. Alternatively, if zinc oxide were considered the metallic film, although some of the zinc oxide layer 12 is displaced, this layer is never completely removed. As can be seen in Figs. 2F and 4G, elements of the zinc oxide film remain to completion. Furthermore, portions of the electroless plating film covering up the metallic film are also removed as part of the method of claim 14, and *Takahashi et al.* does not disclose this feature either. Applicant respectfully requests that *Takahashi et al.* be removed as an anticipating reference to claim 14.

In regard to claim 15, Applicant has amended the claim in order to more distinctly claim the subject matter Applicant regards as his invention. Specifically, Applicant has amended claim 15 to include the limitation of claim 1 “forming an electroless plating film on the surface of the object to be plated, without the metallic film formed thereon and the metal in contact therewith.” As discussed above, *Takahashi et al.* does not disclose this limitation. Applicant respectfully requests that *Takahashi et al.* be removed as an anticipating reference to claim 15.

Claims 16 and 20 depend from claim 1. Applicant respectfully refers to the reasons above for the allowability of claim 1.

In regard to claims 2, 5, and 17, no reference is made to claim 2 in the Response. Further, Applicant respectfully submits that sufficient reference to the rejection of claims 5 and 17 depending on claim 2 are not cited in the Action, even though *Takahashi et al.* is cited in regard to claim 5. Clarification is respectfully requested.

Currently, claims 3, 9, 13, and 18 stand rejected under 35 U.S.C. §102(e) as being anticipated by *Meyer et al.* (USP 6,403,168).

In regard to claim 3, Applicant has amended the claim to more distinctly claim the subject matter he regards as the invention. Specifically, Applicant has amended the claim to include the limitation of claim 1 “forming an electroless plating film on the surface of the object to be plated without the metallic film formed thereon and the metal in contact therewith.” *Meyer et al.* does not disclose this limitation, as *Meyer et al.* only discloses the formation of the second metal coating on the surface of the first. Hence, Applicant respectfully submits that *Meyer et al.* does not anticipate amended claim 3 and requests the rejection be withdrawn.

In regard to claim 9, Applicant respectfully traverses on the basis that *Meyer et al.* does not disclose all the limitations of claim 9. Specifically, *Meyer et al.* does not disclose, nor is it capable of forming, the electroless plating film on both end faces 1a and 1b of the respective thermoelectric semiconductors as taught in the present invention (*see* Figs. 9 and 10, and page 21, lines 14-25). *Meyer et al.* only discloses a process whereby electroless plating can occur on a catalyzed metal surface. The electroless plating cannot be formed directly on the thermoelectric semiconductors, 1. Wherefore, Applicant respectfully requests that *Meyer et al.* be removed as an anticipating reference to claim 9.

In regard to claim 13, Applicant has amended the claim in order to more distinctly claim the subject matter Applicant regards as his invention. Specifically, claim 13 has been amended to include the limitation of claim 1 “forming an electroless plating film on the surface of the object to be plated, without the metallic film formed thereon and the metal in contact therewith.” As discussed above in regard to claim 3, *Meyer et al.* does not disclose this limitation. Applicant respectfully requests that *Meyer et al.* be removed as an anticipating reference to claim 13.

Finally, Applicant acknowledges that claims 6-8 and 22 have been allowed and that claims 10 to 12 would be allowed if rewritten in independent format. However, for the reasons discussed above, it is believed that all claims are in condition for allowance.


In regard to claims 10-12, these claims depend on claim 6 which has been allowed. Therefore, Applicant respectfully submits that claims 10-12 should be allowed in the present dependent format.

For at least the foregoing reasons, it is believed that this application is now in condition for allowance. If, for any reason, it is believed that this application is not in condition for allowance, Examiner is encouraged to contact the Applicants' undersigned attorney at the telephone number below to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

By:   
Stephen G. Adrian  
Reg. No.: 32,878  
Attorney for Applicant  
Tel: (202) 822-1100  
Fax: (202) 822-1111

Attachment: Petition for Extension of Time w/Fee  
Change of Correspondence Address

MJC/SGA/rer